MM DKT. 87-268

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Advanced TV

Advisory Committee on Advanced Television (ATV) Service

MEETING OF SYSTEMS SUBCOMMITTEE WORKING PARTY 3 (ECONOMIC ASSESSMENT)

HELD ON 20 MAY, 1992, AT NCTA,
1724 MASSACHUSETTS AVENUE, N.W., WASHINGTON, D.C.

MEETING NOTES

1. CALL TO ORDER.
The meeting was called to order at 09:05 AM.

2. APPROVAL OF MINUTES.
The minutes of the previous meeting were approved.

3. INTRODUCTION.
The Chair reported that since the last meeting, he had formed a task force consisting of five manufacturers (Ampex, BTS, Grass Valley, Panasonic, and Sony), who were to review the information submitted by the proponents and determine if it was sufficient to conduct a cost analysis. The comments of the task force were to be fed back to the proponents.

Two proponents had submitted information (Zenith/AT&T, and GI). At this meeting, (CLI of the ATRC Consortium) submitted an information package. A majority of the task force found Zenith to have provided an information package closest to that desired. Following considerable discussion, a final set of criteria for the final information package was agreed to.

The final analysis of the proponents' systems has to be delivered to SSWP-4 by 30 September. To do so, it will be essential to receive complete and adequate information from the proponents by our next meeting in June. The months of July and August will be spent on cost analysis.

A representative of Zenith stated that it would be acceptable to distribute their information package as seen advisable by the Chair.

Zenith and ATRC expressed a willingness to make a formal presentation at the meeting. T. Lookabough (CLI) made a presentation and distributed a document. The block diagrams showed MPEG-1 encoding for audio and video. The overview block diagram showed the video compression encoder, the transport encoder, and the channel modulator. In the motion processor, it was noted that a hierarchical search system was used, which is not the technique used in the equipment being evaluated at ATTC, where an exhaustive search system is employed.

A discussion ensued on the validity of presenting a system implementation which is different from the equipment now being tested at ATTC. The Chair urged that this matter be forwarded to SS WP-2 for resolution.

The CLI presentation continued with a description of the complexity of the pre-processor, the motion processor, and the transform encoder.

M. Weiss urged that SS WP-2 be advised of any possible changes in the complexity of the equipment.

P. Symes observed that while it would be better to cost what is incorporated in the equipment at the ATTC test, if a different technique is presented to SS WP-3, as representative of future product, it should not be algorithmically less complex.

The Chair announced his intention to bring in semiconductor manufacturers to assist in the work of the task force in assessing the cost of the solid state components.

The Chair suggested that the proponents now prepare a revised package describing their system, based on the decisions and needs expressed at this meeting and send it to the Chair, who would then distribute it to the members of the task force.

The attendees agreed to modified guidelines for the new information packages, viz.:

(i) A simplified system block diagram and tutorial description (the SS WP-1 package),

(ii) The system should be functionally and algorithmically equivalent to the equipment submitted to ATTC for test. However, system variations may be submitted as additional information for evaluation,

(iii) A detailed functional block diagram,

(iv) Memory blocks:
size,
bus width,
access time,
address width,

(v) Gate count and speeds,

(vi) Mega operations /sec for each computational sub-system block,

(vii) Transfer width and speed between blocks,

(viii) Estimate of 1995 implementation (circuit board size and IC count).

Only Zenith had provided information on the modulator, and the information was distributed by R. Lee. The Chair asked the proponents to deliver information on the modulator and their reformatters at the time of the next meeting, in addition to their revised system package.

The meeting turned next to a discussion of the block diagrams for the "Transitional" and the "Minimal" television station, prepared by M. Weiss.

The Chair next read from a letter from R. Frazier which contained an important consideration for proponents;

"The contribution signal decoder that receives the external input signals must partially decode the signal to the point where transmission distortions are eliminated and remaining detected distortions are made less visible by error concealment techniques.

A safe assumption is made that unconcealed video errors introduced by the transmission path are objectionable and unconcealed audio errors are intolerable. Before committing to an evaluation of the system, I suggest that the proponents recommend a suitable place in the sequence of decoding operations where the signal may be extracted and re-encoded to a unique simple or compressed signal that can be distributed throughout the "minimal" transmission station."

It was generally agreed that some decoding and error correction would be essential given the format used by all the proponents for the satellite contribution signal, and these functions must be considered as part of the receiver. The "satellite receiver and demodulator" block in the Minimal station diagram will have the following text added:

"provides any error correction required to compensate for the satellite link".

In reviewing the "minimal " station block diagram, the Chair stated that proponents must describe the complexity of each functional block. The adjective " optional" means that each proponent must state whether he requires the inclusion of the block or not. More effectively, each proponent should prepare his own block diagram of the functions required in the minimal station.

Discussions took place on the implications of simulcast broadcasting on the functional structure of the minimal station.

Following a discussion on the requirements for video keying, wipes and dissolves, and for separated audio and video cuts in program material, it was agreed to form a Broadcast Consultative Task Force, whose members would stand ready to answer any questions from proponents on the detailed needs of broadcasters. A list of members is appended to these minutes.

In discussion, it was agreed that even with nominal pass-through operations, record and playback facilities will be needed by stations in both the "transitional" and "minimal" station format.

There was concern that the degree of compression postulated by proponents for intra-plant routing and processing would be used in assessing the value of the transmission system proposed, and that this was unfair in that proponents could offer any required compression level to match the abilities of different VTRs with different costs. The Chair responded by reiterating that the mission of WP-3 was to analyze the cost to broadcasters in addition to its other tasks, and he appealed to proponents to build their own station system block diagram which responded to all the functions presented in the "minimal" station
The Chair urged that receiver manufacturers respond quickly to the questionnaire issued by R. Justus. Concern was expressed that the HDTV receiver might require a special and possibly more expensive antenna

4 ACTIONS

Proponents were asked to submit their revised package of information as defined herein, and to send it to the Chair by 6.10.92. Proponents were asked to be ready to make a formal presentation on their system at the next meeting on 6.23.92.

Submitted by . . . . . .

Approved by . . . . . .